



FRAV20030009 US NP Sequence Listing.txt
SEQUENCE LISTING

<110> AVENTIS PHARMA SA
GUILLAUME, Jean-Marc
DITTRICH, Werner
PEREZ, Sandrine
ANDREONI, Christine Michelle Pierrette
PAILLOT, Romain

<120> METHOD FOR OBTAINING MASTOCYTE LINES FROM PIG TISSUES AND FOR PRODUCING
HEPARIN-TYPE MOLECULES

<130> FRAV2003/0009 US NP

<140> 10/823,142
<141> 2004-04-13

<150> 60/477,962
<151> 2003-06-12

<150> FR 0304671
<151> 2003-04-14

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<170> PatentIn Ver. 2.1

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 35 40 45
 Ser Ala Gly Asp Glu Ile Arg Leu Phe Cys Thr Asp Pro Gly Ser Val
 50 55 60
 Lys Trp Thr Phe Glu Thr Leu Gly Gln Leu Ser Glu Asn Thr His Ala
 65 70 75 80
 Glu Trp Ile Val Glu Lys Ala Glu Ala Met Asn Thr Gly Asn Tyr Thr
 85 90 95
 Cys Thr Asn Glu Gly Gly Leu Ser Ser Ser Ile Tyr Val Phe Val Arg
 100 105 110
 Asp Pro Glu Lys Leu Phe Leu Val Asp Pro Pro Leu Tyr Gly Lys Glu
 115 120 125
 Asp Asn Asp Ala Leu Val Arg Cys Pro Leu Thr Asp Pro Glu Val Thr
 130 135 140
 Asn Tyr Ser Leu Thr Gly Cys Glu Gly Lys Pro Leu Pro Lys Asp Leu
 145 150 155 160
 Thr Phe Val Ala Asp Pro Lys Ala Gly Ile Thr Ile Lys Asn Val Lys
 165 170 175
 Arg Glu Tyr His Arg Leu Cys Leu His Cys Ser Ala Asn Gln Gly Gly
 180 185 190
 Lys Ser Val Leu Ser Lys Lys Phe Thr Leu Lys Val Arg Ala Ala Ile
 195 200 205
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 210 215 220

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Val	Lys	Arg	Asn	Ser	Trp	His	Gln	Gly	Asp	Phe	Asn	Phe	Leu	Arg	Gln	
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Glu	Arg	Leu	Thr	Ile	Ser	Ser	Ala	Arg	Val	Asn	Asp	Ser	Gly	Val	Phe	
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Met	Cys	Tyr	Ala	Asn	Asn	Thr	Phe	Gly	Ser	Ala	Asn	Val	Thr	Thr	Thr	
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Thr	Thr	Val	Phe	Val	Asn	Asp	Gly	Glu	Asp	Val	Asp	Leu	Ile	Val	Glu	
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Tyr	Glu	Ala	Tyr	Pro	Lys	Pro	Glu	His	Arg	Gln	Trp	Ile	Tyr	Met	Asn	
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Thr	Glu	Gly	Gly	Thr	Tyr	Thr	Phe	Leu	Val	Ser	Asn	Ala	Asp	Val	Asn	
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Ser	Ser	Val	Thr	Phe	Asn	Val	Tyr	Val	Asn	Thr	Lys	Pro	Glu	Ile	Leu	
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Thr	His	Asp	Arg	Leu	Met	Asn	Gly	Met	Leu	Gln	Cys	Val	Ala	Ala	Gly	
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Phe	Pro	Glu	Pro	Thr	Ile	Asp	Trp	Tyr	Phe	Cys	Pro	Gly	Thr	Glu	Gln	
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Arg	Cys	Ser	Val	Pro	Val	Gly	Pro	Val	Asp	Val	Gln	Ile	Gln	Asn	Ser	
	450					455					460					
Ser	Val	Ser	Pro	Phe	Gly	Lys	Leu	Val	Ile	His	Ser	Ser	Ile	Asp	Tyr	
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Ser	Ala	Phe	Lys	His	Asn	Gly	Thr	Val	Glu	Cys	Arg	Ala	Tyr	Asn	Asp	
				485					490					495		
Val	Gly	Lys	Ser	Ser	Ala	Phe	Phe	Asn	Phe	Ala	Phe	Lys	Glu	Gln	Ile	
			500					505					510			
His	Ala	His	Thr	Leu	Phe	Thr	Pro	Leu	Leu	Ile	Gly	Phe	Val	Ile	Ala	
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Ala	Gly	Met	Met	Cys	Ile	Ile	Val	Met	Ile	Leu	Thr	Tyr	Lys	Tyr	Leu	
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Ala	Gly	Ala	Phe	Gly	Lys	Val	Val	Glu	Ala	Thr	Ala	Tyr	Gly	Leu	Ile	595	600	605	
Lys	Ser	Asp	Ala	Ala	Met	Thr	Val	Ala	Val	Lys	Met	Leu	Lys	Pro	Ser	610	615	620	
Ala	His	Leu	Thr	Glu	Arg	Glu	Ala	Leu	Met	Ser	Glu	Leu	Lys	Val	Leu	625	630	635	640
Ser	Tyr	Leu	Gly	Asn	His	Met	Asn	Ile	Val	Asn	Leu	Leu	Gly	Ala	Cys	645	650	655	
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Asp	Leu	Leu	Asn	Phe	Leu	Arg	Arg	Lys	Arg	Asp	Ser	Phe	Ile	Cys	Ser	675	680	685	
Lys	Gln	Glu	Asp	His	Ala	Glu	Ala	Ala	Leu	Tyr	Lys	Asn	Leu	Leu	His	690	695	700	
Ser	Lys	Glu	Ser	Ser	Cys	Ser	Asp	Ser	Thr	Asn	Glu	Tyr	Met	Asp	Met	705	710	715	720
Lys	Pro	Gly	Val	Ser	Tyr	Val	Val	Pro	Thr	Lys	Ala	Asp	Lys	Arg	Arg	725	730	735	
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Met	Glu	Asp	Asp	Glu	Leu	Ala	Leu	Asp	Leu	Glu	Asp	Leu	Leu	Ser	Phe	755	760	765	
Ser	Tyr	Gln	Val	Ala	Lys	Gly	Met	Ala	Phe	Leu	Ala	Ser	Lys	Asn	Cys	770	775	780	
Ile	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Ile	Leu	Leu	Thr	His	Gly	Arg	785	790	795	800
Ile	Thr	Lys	Ile	Cys	Asp	Phe	Gly	Leu	Ala	Arg	Asp	Ile	Lys	Asn	Asp	805	810	815	
Ser	Asn	Tyr	Val	Val	Lys	Gly	Asn	Ala	Arg	Leu	Pro	Val	Lys	Trp	Met	820	825	830	
Ala	Pro	Glu	Ser	Ile	Phe	Asn	Cys	Val	Tyr	Thr	Phe	Glu	Ser	Asp	Val	835	840	845	
Trp	Ser	Tyr	Gly	Ile	Phe	Leu	Trp	Glu	Leu	Phe	Ser	Leu	Gly	Ser	Ser				

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855

860

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Glu Gly Phe Arg Met Leu Ser Pro Glu His Ala Pro Ala Glu Met Tyr
 885 890 895

Asp Ile Met Lys Thr Cys Trp Asp Ala Asp Pro Leu Lys Arg Pro Thr
 900 905 910

Phe Lys Gln Ile Val Gln Leu Ile Glu Lys Gln Ile Ser Glu Ser Thr
 915 920 925

Asn His Ile Tyr Ser Asn Leu Ala Asn Cys Ser Pro His Arg Glu Asn
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          35          40          45
Ala Ala Pro Asn Gly Ser Val Gln Gln Leu Pro Gln Thr Ile Ile Ile
          50          55          60
Gly Val Arg Lys Gly Gly Thr Arg Ala Leu Leu Glu Met Leu Ser Leu
          65          70          75          80
His Pro Asp Val Ala Ala Ala Glu Asn Glu Val His Phe Phe Asp Trp
          85          90          95
Glu Glu His Tyr Ser Gln Gly Leu Asp Trp Tyr Leu Ser Gln Met Pro
          100          105          110
Phe Ser Tyr Pro His Gln Leu Thr Val Glu Lys Thr Pro Ala Tyr Phe
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Thr Ser Pro Lys Val Pro Glu Arg Val His Arg Met Asn Pro Ser Ile
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Arg Leu Leu Leu Ile Leu Arg Asp Pro Ser Glu Arg Val Leu Ser Asp
          145          150          155          160
Tyr Thr Gln Val Phe Tyr Asn His Val Gln Lys His Lys Pro Tyr Pro
          165          170          175
Ser Ile Glu Glu Phe Leu Val Arg Asp Gly Arg Leu Asn Val Asp Tyr
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Lys Ala Leu Asn Arg Ser Leu Tyr His Val His Met Gln Asn Trp Leu
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Arg Phe Phe Pro Leu Arg Arg Ile His Ile Val Asp Gly Asp Arg Leu
 210 215 220

Ile Arg Asp Pro Phe Pro Glu Ile Gln Lys Val Glu Arg Phe Leu Met
 225 230 235 240

Leu Ser Pro Gln Ile Asn Ala Ser Asn Phe Tyr Phe Asn Lys Thr Lys
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Gly Phe Tyr Cys Leu Arg Asp Gly Gly Arg Asp Arg Cys Leu His Glu
 260 265 270

Ser Lys Gly Arg Ala His Pro Gln Ile Asp Pro Lys Leu Leu Asn Lys
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35 40 45	
Ala Pro Pro Asp Asp Leu Asp Leu Phe Pro Thr Pro Asp Pro His Tyr	
50 55 60	
Glu Lys Lys Tyr Tyr Phe Pro Val Arg Glu Leu Glu Arg Ser Leu His	
65 70 75 80	
Phe Asp Met Lys Gly Asp Asp Val Ile Val Phe Leu His Ile Gln Lys	
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Thr Gly Gly Thr Thr Phe Gly Arg His Leu Val Gln Asn Val Arg Leu	
100 105 110	
Glu Val Pro Cys Asp Cys Arg Pro Gly Gln Lys Lys Cys Thr Cys Tyr	
115 120 125	
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130 135 140	
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145 150 155 160	
Pro Gly Val Leu Asp Arg Arg Asp Pro Ala Ala Leu Arg Thr Pro Arg	
165 170 175	

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Lys Phe Tyr Tyr Ile Thr Leu Leu Arg Asp Pro Val Ser Arg Tyr Leu
180 185 190

Ser Glu Trp Arg His Val Gln Arg Gly Ala Thr Trp Lys Thr Ser Leu
195 200 205

His Met Cys Asp Gly Arg Thr Pro Thr Pro Glu Glu Leu Pro Pro Cys
210 215 220

Tyr Glu Gly Thr Asp Trp Ser Gly Cys Thr Leu Gln Glu Phe Met Asp
225 230 235 240

Cys Pro Tyr Asn Leu Ala Asn Asn Arg Gln Val Arg Met Leu Ala Asp
245 250 255

Leu Ser Leu Val Gly Cys Tyr Asn Leu Ser Phe Ile Pro Glu Gly Lys
260 265 270

Arg Ser Gln Leu Leu Leu Glu Ser Ala Lys Lys Asn Leu Arg Gly Met
275 280 285

Ala Phe Phe Gly Leu Thr Glu Phe Gln Arg Lys Thr Gln Tyr Leu Phe
290 295 300

Glu Arg Thr Phe Asn Leu Lys Phe Ile Arg Pro Phe Met Gln Tyr Asn
305 310 315 320

Ser Thr Arg Ala Gly Gly Val Glu Val Gly Glu Asp Thr Ile Arg Arg
325 330 335

Ile Glu Glu Leu Asn Asp Leu Asp Met Gln Leu Tyr Asp Tyr Ala Arg
340 345 350

Asp Leu Phe Gln Gln Arg Tyr Gln Tyr Lys Arg Gln Leu Glu Arg Arg
355 360 365

Gln Gln Arg Leu Arg Ser Arg Glu Glu Arg Leu Leu His Arg Ala Lys
370 375 380

Glu Ala Pro Pro Arg Gly Asp Thr Glu Glu Pro Gly Arg Val Pro Thr
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Glu Asp Tyr Met Ser His Ile Ile Glu Lys Trp
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39

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FRAV20030009 US NP Sequence Listing.txt

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<213> Sus scrofa

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<210> 22
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FRAV20030009 US NP Sequence Listing.txt

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FRAV20030009 US NP Sequence Listing.txt

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55